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12SCS253

Second Semester M.Tech. Degree Examination, June/July 2014

Protocols Engineering

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Define protocol. Construct the flowchart and finite state machine for simple message exchange protocol and explain. (12 Marks)
b. What is meant by protocol engineering? Explain the phases of protocol engineering. (08 Marks)
- 2 a. What is meant by error control? Explain different types of transmission errors. (10 Marks)
b. Describe the following:
i) Sequence numbers
ii) Negative acknowledgements. (10 Marks)
- 3 a. List the functions of communication protocols and explain them in brief. (10 Marks)
b. Explain different application layer protocols. (10 Marks)
- 4 a. Identify the components of HDLC protocol and give its specification using FSM. (12 Marks)
b. Give FSMs of RSVP specifications at router and host level. (08 Marks)
- 5 a. Write the SDL specifications of Alternating Bit Protocol (ABP) and explain. (12 Marks)
b. Give the hierarchy of a SDL structure and explain each component in the hierarchy. (08 Marks)
- 6 a. What are the different techniques for protocol validation? Explain them in detail. (12 Marks)
b. Describe the following with respect to two process communication system.
i) State deadlocks
ii) Unspecified receptions (08 Marks)
- 7 a. Write the architecture of distributed conformance testing and explain. (05 Marks)
b. Describe test sequence generation using U-method and D-method for mealy machine. (10 Marks)
c. Define scalability. Explain the scalability testing of BGP. (05 Marks)
- 8 a. Describe interactive synthesis algorithm. (05 Marks)
b. Explain the steps of object based design of a protocol. (07 Marks)
c. Discuss the synthesis methodology for deriving SDL specifications. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.